

Remarks/Arguments

Reconsideration of the subject application as amended hereinabove is respectfully requested.

The Applicant would like to thank the Examiner for the courtesy extended during the interview of April 1, 2004.

The claims were rejected as being anticipated by or obvious over Brown alone or in combination with Garnier. The Applicant respectfully traverses these rejections. Brown discloses an injection syringe which is advanced into a predetermined position and then two drugs are released in sequence while the needle is turning about its axis thereby forming either a sphere, as seen in Figs. 2 and 3, or two joined spherical portions as seen in Fig. 4 (See also Col. 1, lines 43-52). It is clear from the specification and from these drawings that the needle is only rotated only after it has reached the injection site. Therefore the needle is clearly not simultaneously translated and rotated.

The Examiner has indicated that he is relying on Brown as teaching that it is well known to twist or turn a needle of a syringe while inserting it through tissue. Brown merely mentions that "the usual procedure is to insert the needle by a sharp jab or pushing action. Pressure is exerted to the plunger of the syringe to inject the contents. At times, a turning or twisting action may be employed to cause the needle to enter the tissue more easily or more easily affect removal." (Col. 1, lines 16-22). This passage indicates that the rotation is performed either when the needle is to enter the tissue or when it is to be removed from the tissue. There is nothing in this passage to indicate that it is known in the prior art to rotate and translate the needle simultaneously. The Applicant further notes that Brown discloses a standard syringe. Certainly it is impossible to jab a syringe and rotate it simultaneously.

The claims were further rejected in view of Garnier. This patent shows a complicated

mechanism for rotating a needle like using a drill type mechanism that spins the needle around very fast. However there is nothing in this reference about translating the needle simultaneously through a tissue as it is being rotated. It is further noted that in this reference the needle acts as a drill bit that is used to make a hole in a bone. In order to further differentiate the subject application from Garnier, the claims have been amended to recite that the needle is rotated and translated while it advances through a soft or non-mineralized tissue.

As discussed in the specification, the present invention fulfills a long felt need of eliminating pain during an injection. It is well established that in considering whether a claim is obvious, the Examiner must take into consideration objective indicia of obviousness. The Applicant hereby provides the following objective indicia:

A. A declaration by Dr. Ralf Gebhard, M.D. provided under 37 CFR §1.132 as Exhibit A. As indicated in the declaration and in the materials attached thereto, Dr. Gebhard is an expert in the field, as evidenced by his positions in Texas, by his numerous articles, and other professional positions and activities. Dr. Gebhard further indicates in his declaration, that prior to the disclosure of the claimed method by Dr. Hochman (the present inventor) he has never heard of the claimed process. Dr. Gebhard further indicates that initially he had doubts that the procedure would work but that he has performed some tests, and based on these tests, he has concluded that the claimed method does work and that it provides a solution to a long-felt need.

B. Also attached as Exhibit B is a printout made on June 3, 2004, of a website http://www.midentistry.com/WAND_CPD.html. This site is an international website that is hosted out of South Africa and its contents are overseen by Dr. Steffen Mickenautsch, BDS from the University of University of the Witwatersrand, Johannesburg Medical School Division of Community Dentistry, Faculty of Health Sciences, a known expert in the field of Minimally Invasive Dentistry. The website is used for continuing education activities all over the world. It


should be noted that on page 4 of the printout, there is provided a discussion of the claimed method of performing injections and its advantages. Thus, this web site illustrates that the claimed method is becoming well known as a superior method of performing injections.

It is respectfully submitted that the subject application is allowable.

Dated: June 7, 2004
New York, New York

Respectfully submitted,

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By: 
WEISZ, Tiberiu
Reg. No. 29,876

Enclosures: Exhibits A and B

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	:	09/745,751	Confirmation No.:	1104
Applicant	:	HOCHMAN, Mark N.		
Filed	:	December 21, 2000		
TC/A.U.	:	3763		
Examiner	:	HAYES, Michael J.		
Docket No.	:	3486-018		
Customer No.	:	22440		

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION UNDER 37CFR 1.132

I, Ralf Gebhard, MD, hereby make the following declaration in support of the above-named application:

1. I reside at 7171 Buffalo Speedway, Houston, Texas 77030-1503.
2. I presently hold several positions at the University of Texas – Health Science Center at Houston and Memorial Hermann Hospital in Houston, Texas, including:

Associate Professor- Department of Anesthesiology

Medical Director- Day Surgery Unit and Anesthesia Clinic

Assistant Director-Operating Room

3. I have written and published many articles in the field of medicine, including articles related to Anesthesiology. I have also reviewed many articles in this field and I am frequent lecturer in this field, having made presentations all over the world.

4. I have received many support grants for investigating various issues associated with Anesthesiology.

5. A copy of my current Curriculum Vitae is attached providing more details of my background and expertise in the field of Anesthesiology.

6. One problem in the field of Anesthesiology is needle bending. As a needle is introduced through tissues to a preselected site for delivering an anesthetic, it frequently bends. The amount of bending depends on a number of factors, such as tissue density and structure, the depth to which the needle is introduced, the thickness of the needle and its composition, etc. Needle bending is undesirable, because it reduces the accuracy of the placement, it leads to pain, it causes unnecessary tissue damage, and if the preselected site is missed completely, the needle may have to be reinserted and the injection may have to be repeated.

7. Recently, Dr. Mark Hochman disclosed to me his invention that solves the problem of needle bending. More specifically, Dr. Hochman has disclosed to me:

a method of injecting a drug into a patient through a needle having a lumen comprising the steps of:

Advancing said needle into the tissue linearly along a longitudinal axis of the needle;

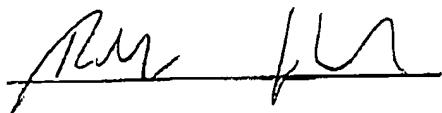
Simultaneously rotating the needle along its longitudinal axis to reduce deflection of the needle; and

Injecting the drug.

8. As Indicated above, and in my Curriculum Vitae, I am recognized as an expert in the field of Anesthesiology. However, prior to Dr. Hochman's disclosure, I have never heard or seen this procedure described anywhere.

9. Initially, I had some doubts that this procedure would work. However, I have performed several investigations using this procedure and I came to the conclusion that this procedure does indeed work, and it does provide a solution to the long-felt problem of needle bending.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

A handwritten signature in black ink, appearing to be 'Ralf Gebhard', written over a horizontal line.

Ralf Gebhard, M.D.
Associate Professor of Anesthesiology

Date: 6/2/04

July, 2003

CURRICULUM VITAE

NAME: Ralf Gebhard, M.D.

PRESENT TITLE: Assistant Professor, Department of Anesthesiology
Medical Director, Day Surgery Unit and Anesthesia Clinic
Assistant Director Operating Room
Memorial Hermann Hospital
Houston, Texas 77030

BUSINESS ADDRESS: The University of Texas Medical School at Houston
Department of Anesthesiology
6431 Fannin MSB 5.020
Houston, Texas 77030-1503
U.S.A.

CONTACT: Phone: 713 500-6248
E-mail: Ralf.Gebhard@uth.tmc.edu

HOME ADDRESS: 7171 Buffalo Speedway, Apt. #1333
Houston, Texas 77025

BIRTHDATE: September 18, 1962

CITIZENSHIP: German
Pending permanent U.S.A. citizenship

UNDERGRADUATE EDUCATION:

8/1972 – 6/1982	Freiherr vom Stein Gymnasium Rösrath
6/1982	Final Examination (Abitur)

GRADUATE EDUCATION:

10/1983 – 11/1989	Medical School Rheinisch-Westfälische-Technische Hochschule Aachen
12/1989 – 2/1990	Medical School University of the Witwatersrand, Baragwanath Hospital Johannesburg-Soweto, South Africa

3/1990 – 5/1990	Medical School Rheinisch-Westfälische-Technische Hochschule Aachen
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5/30/1990	Graduation
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POSTGRADUATE TRAINING:

7/1990 – 4/1996	Anesthesiology Residency Kliniken der Stadt Köln, Cologne, Germany
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MILITARY SERVICE:

7/1982 – 9/1983	German Air Force
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ACADEMIC APPOINTMENTS:

5/1998 – 5/2000	Visiting Assistant Professor Department of Anesthesiology The University of Texas-Houston Medical School Houston, Texas
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1/2001 – 8/2003	Assistant Professor Department of Anesthesiology The University of Texas-Houston Medical School Houston, Texas
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9/2003	Associate Professor Department of Anesthesiology The University of Texas-Houston Medical School Houston, Texas
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HOSPITAL APPOINTMENTS:

7/1990 – 3/1994	Krankenhaus Köln Merheim Kliniken der Stadt Köln Cologne, Germany
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4/1994 – 10/1994	Krankenhaus Köln Holweide Kliniken der Stadt Köln Cologne, Germany
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10/1994 – 5/1998	Krankenhaus KölnMerheim Kliniken der Stadt Köln Cologne, Germany
5/1998 – 5/2000	Memorial Hermann Hospital Houston, Texas
5/1998 – 5/2000	Lyndon B. Johnson Hospital Houston, Texas
5/2000 – 12/2000	Krankenhaus Köln Merheim Kliniken der Stadt Köln Cologne Germany
1/2001 – Present	Memorial Hermann Hospital Houston, Texas
1/2001 – Present	Lyndon B. Johnson Hospital Houston, Texas
1/2001 – Present	Medical Director, Day Surgery Unit Memorial Hermann Hospital Houston, Texas
1/2001 – Present	Medical Director, Anesthesia Clinic Memorial Hermann Hospital Houston, Texas

LICENSURE:

6/1998 – 5/2000	Texas Medical License # VP 34296
10/2000 – Present	Texas Medical License # FTL 39380

BOARD CERTIFICATION:

4/1996	German Board Certification for Anesthesiology
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PROFESSIONAL ORGANIZATIONS (AND COMMITTEES OF THESE):

REGIONAL:	1999 – Present	Texas Society of Anesthesiologists
NATIONAL:	1999 – Present	American Society of Anesthesiologists
	2001 – Present	American Society of Regional Anesthesia and Pain Medicine
	2002 – Present	International Anesthesia Research Society

HONORS AND AWARDS:

2002	Deans Excellence in Teaching Award – The University of Texas Medical School at Houston, Houston, Texas
2003	Deans Excellence in Teaching Award – The University of Texas Medical School at Houston, Houston, Texas

EDITORIAL POSITIONS:

1999 – Present	Associate Editor www.regionalblock.com
2002 – Present	<i>Anesthesiology</i> – Reviewer
2003 – Present	<i>Anesthesia & Analgesia</i> – Reviewer
2003 – Present	<i>Regional Anesthesia and Pain Medicine</i> - Reviewer

SERVICE ON THE UNIVERSITY OF TEXAS MEDICAL SCHOOL AT HOUSTON COMMITTEES:

1998 – Present	International Regional Anesthesia Research Center, Houston, Texas
1999 – Present	Acute Orthopaedic Pain Service, Memorial Hermann Hospital, Houston, Texas
2001 – Present	OR Directors Committee, Department of Anesthesiology, The University of Texas Medical School at Houston, Houston, Texas
2001 – Present	Senator, Faculty Senate, University of Texas-Houston Medical School, Houston, Texas
2001 – Present	Resident Recruitment Committee, Department of Anesthesiology, The University of Texas Medical School at Houston, Houston, Texas
2001 – Present	Liver Transplant Team, Department of Anesthesiology, University of Texas-Houston Medical School, Houston, Texas
2002 – Present	Clinical Competence Committee, Department of Anesthesiology, The University of Texas Medical School at Houston, Houston, Texas

SERVICE ON MEMORIAL-HERMANN-HOSPITAL COMMITTEES:

2002 – 2003	Infection Control Committee
2002 – 2003	Medical Records Committee

SERVICE TO THE COMMUNITY:

1993 – 1998	Volunteer Physician, Mobile Intensive Care Unit “Intensivmobil”, Arbeiter Samariter Bund, Cologne, Germany
6/1994	Emergency Physician in Charge of the Mobile Intensive Care Unit “Intensivmobil” for the Meeting between the French President Francois Mitterand and the German Chancellor Hellmut Kohl in Heidelberg, Germany
12/1994	Emergency Physician in Charge of the Mobile Intensive Care Unit “Intensivmobil” during the Meeting of the European Council in Essen, Germany

SPONSORSHIP OF POSTDOCTORAL FELLOWS:

2000	Tameem Al-Samsam, M.D.
2001	Danuta Kocieniewska, M.D.
2002 – Present	Yefim Bogolmony, M.D.

TEACHING RESPONSIBILITIES:

4/1996 – 5/1998	Resident education, Residency Program, Kliniken der Stadt Köln, Krankenhaus Köln-Merheim Teaching of medical students, University of Witten- Herdecke, Anesthesiology Rotation,
6/1998 – 5/2000	Resident Didactic Lectures Resident Journal Club Resident Subspecialty Lectures

Resident Subspecialty Clinical Teaching - Regional Anesthesia Rotation

MS III Intraoperative Clinical Teaching/Skills

MS IV Intraoperative Clinical Teaching/Skills

Airway Management Clinical Education for Lifeflight Nurses-Memorial Hermann Hospital

5/2000 – 12/2000

Resident education, Residency Program, Kliniken der Stadt Köln, Krankenhaus Köln-Merheim

1/2001 – Present

Resident Didactic Lectures

Resident Morning Report

Resident Journal Club

Resident Subspecialty Lectures

Resident Subspecialty Clinical Teaching - Regional Anesthesia Rotation

Resident Subspecialty Clinical Teaching - Liver Transplant Rotation

Resident Subspecialty Clinical Teaching - Acute Orthopedic Pain management

Resident Subspecialty Clinical Teaching - Orthopedic Anesthesia

Resident Subspecialty Clinical Teaching - Anesthesia Clinic

Resident Subspecialty Clinical Teaching - Day Surgery Unit

Subspecialty Journal Club - Regional Anesthesia

MS III Intraoperative Clinical Teaching/Skills

MS IV Intraoperative Clinical Teaching/Skills

Airway Management Clinical Education for Lifeflight
Nurses-Memorial Hermann Hospital

Regional Anesthesia Lecture for Day Surgery Nurses

CURRENT GRANT SUPPORT:

- | | |
|------|--|
| 2002 | Co-Investigator: A Randomized, Double-Blind, Parallel Group, Placebo-Controlled, Pilot Dose Ranging Study of Intravenous Kytril in the Prevention of Post-Operative Nausea and Vomiting in Patients Undergoing Abdominal Hysterectomy. Roche Laboratories \$ 62,025. PI: Jacques E.Chelly, 1/02 – 9/02 |
| 2002 | Co-Investigator: A Multicenter, Double Blind, Placebo Controlled, Randomized Study of the Analgesic Efficacy, Safety and Tolerability of Valdecoxib 40 mg over Seven Days in Patients Undergoing Anterior Cruciate Ligament Surgery. Pharmacia \$ 82,414. PI: Jacques E. Chelly, 1/02 – 8/02 |
| 2002 | Co-Investigator: A Randomized, Double-Blind, Placebo-Controlled Trial of the Effect of Rofecoxib 50 mg and Hydrocodone 7.5 mg with Acetaminophen 750 mg in Patients with Postoperative Arthroscopic Pain. Merck & Co. \$ 110,800. PI: Jacques E. Chelly, 1/02 – 8/02 |
| 2002 | Co-Investigator: A Multicenter, Phase III, Double-Blind, Placebo-Controlled Study of ADL 8-2698 in Opioid-Induced Postoperative Bowel Dysfunction. Postoperative Ileus in Subjects Undergoing Total Abdominal Simple Hysterectomy. Adolor Corporation. \$ 90,000. PI: Samia Khalil. 2/02 – 12/02 |
| 2002 | Co-Investigator: Dexmedetomidine for Orthopedic Anesthesia. Abbott Laboratories. \$ 37,922. PI: Robert Pousman D.O. 10/01 – 2/03 |
| 2002 | Principal Investigator: Accuracy of B.Braun Certofix Central Venous Catheter Placement Utilizing B Braun Certodyn Universal Adapter. B Braun Medical, Inc. \$ 51,624. 9/02 – 12/03 |

- 2002 Principal Investigator: Clinical Protocol for a Double-Blind Multicenter Study of the Safety and Efficacy of Parecoxib Followed by Valdecoxib Compared to Placebo in General Surgery Patients for Treatment of Post-Surgical Pain. Pharmacia. \$ 80,000. 9/02 – 12/02
- 2002 Principal Investigator: Clinical Protocol for a Multiple Dose Randomized, Double-Blind Multicenter Study of the Analgesic Efficacy of the Dosing Regimen of Parecoxib Sodium Compared to Placebo in Patients for the Treatment of Post-Surgical Pain from Orthopedic Surgery. Pharmacia. \$ 80,000. 11/02 – 04/03

PAST GRANT SUPPORT:

- 1999 Co-Investigator: A Multicenter, Single-Blind, Active Controlled, Dose Escalation Study to Evaluate the Safety and Efficacy of O-Raffinose Cross Linked Human Hemoglobin (Hemolink) as a Red Blood Cell Substitute in Patients Undergoing Orthopedic Surgery. Hemosol (USA), Inc. \$115,000. PI Jacques E. Chelly. 10/99 – 6/02
- 2001 Co-Investigator: A Multicenter, Double-blind, Randomized Study of the Efficacy and Safety of a single dose of IV Parecoxib Sodium Followed by up to Seven Days of Oral Valdecoxib for the Pain Following Laparoscopic Cholecystectomy. Pharmacia. \$ 96,000. PI Jacques E. Chelly. 4/01 – 11/02
- 2001 Co-Investigator: IHAIST 2. Intraoperative Hypothermia for Aneurysm Surgery Multicenter Trial. NIH. \$ 32,000.

OTHER RESEARCH PROJECTS:

1997	Principal-Investigator: Intraoperative Identification and Stimulation of the Recurrent Laryngeal Nerve during Thyroid- and Parathyroid-ectomy.
1999	Co-Investigator: Continuous Femoral Infusion for Perioperative Analgesia in Patients Undergoing Total Hip Replacement.
2000	Principal Investigator: Axillary Block With 0.75% Ropivacaine and 1.5% Mepivacaine–Comparison Between Single and Multiple Injection Technique.
2001	Co-Investigator: Continuous Femoral Infusions for Postoperative Pain Management of ACL or Patella Repair.
2001	Co-Investigator: Multimodal and Perineural Blocks for Anesthesia and Post-Operative Analgesia Following Lower Extremity Amputation.
2001	Co-Investigator: A Prospective, Randomized, Double-Blind Study of the Effects of Clonidine on the Intensity and Duration of Continuous Femoral Nerve Block with Ropivacaine.
2001	Co-Investigator: Lumbar Plexus Block – A Comparison Between Anterior and Posterior Approach for Hip Surgery.
2001	Principal Investigator: Pain Level of Patients Undergoing Ambulatory Surgery During the First 24 Hours After Discharge.
2001	Principal Investigator: Does the Preoperative Visit Influences Anxiety of Patients? – A survey in the Anesthesia Clinic.
2002	Co-Investigator: Length of Impulse Time and Successful Nerve Stimulation in Diabetic Patients.
2002	Principal Investigator: Lateral Sciatic Nerve Block at the Knee – Comparison Between Single and Double Injection Technique.

PUBLICATIONS:

A. ABSTRACTS

1. Matuszczak M, Gebhard R, Schmitz B, Doehn M: Effective postoperative analgesia with long term continuous axillary block. *Anesthesiology* 91:A950, 1999.
2. Chelly JE, Greger J, Harvey G, Gebhard R: Perineural or intra-articular PCA for ambulatory Postoperative pain management. *Dolar* 15:30, 2000.
3. Chelly JE, Greger J, Gebhard R., Khan A: Effects of continuous femoral infusion (CFI) on outcome in patients undergoing total knee replacement (TKR). *Anesthesiology* 93: A874, 2000.
4. Chelly J.E., Hagberg C.A., Gebhard R., Greger J., Khan A.: Teaching peripheral nerve blocks to anesthesiology residents. *Anesthesiology* 93: A1204, 2000.
5. Matuszczak M., Gebhard R, Wolf MJ, Jahn MC, Doehn M: Does increased supervision in the use of nerve stimulation techniques improve the success of axillary plexus block? *Anesthesiology* 93: A1213, 2000.
6. Greger J, Chelly JE, Gebhard R: Peripheral nerve block training during anesthesiology residency. *Anesth Analg* 92: S102, 2001.
7. Matuszczak M, Greger J, Gebhard R, Chelly JE: Lower extremity blocks for orthopedic surgery in infants and children. *Anesth Analg* 92: S264, 2001.
8. Sciard D, Matuszczak M, Greger J, Gebhard R, Chelly JE: Lumbar plexus block for orthopedic procedures in infants. *Anesth Analg* 92: S284, 2001.
9. Hagberg C, Al-Samsam T, Chelly JE, Harvey G, Gebhard R, Greger J: Subacromial patient controlled analgesia for outpatient shoulder reconstruction. *Eur J Anesthesiol* 74: A264, 2000.
10. Gebhard RE, Al-Samsam T, Greger J, Chelly JE: Distal nerve blocks at the wrist for outpatient carpal tunnel surgery. *Anesthesiology* 95: A 14, 2001.
11. Gebhard RE, Greger J, Al-Samsam T, Matuszczak M, Rieger A: Single Injection high axillary block – Comparison with the multiple injection technique. *Anesthesiology* 95: A 968, 2001.
12. Gebhard RE, Matuszczak M, Sciard DA, Wolf M, Doehn M: Does Diabetes Mellitus influence success rate of regional blocks? *Anesthesiology* 95: A 971, 2001.

13. Szmuk P, Ezri T, Warters RD, Gebhard R, Pivalizza E: Changes in Onset time of Rocuronium are related to changes in cardiac output produced by Ephedrine and Esmolol. *Anesthesiology* 95: A993, 2001.
14. Matuszczak ME, Sciard DA, Gebhard RE, Vorweg M, Wolf MJ: Upper extremity continuous perineural blocks in children. *Anesthesiology* 95: A1236, 2001.
15. Chelly JE, Gebhard R, Greger J, Al-Samsam T: Continuous perineural infusion: techniques and indications. *Asian Oceanic Society of Regional Anesthesia* 195, 2001.
16. Chelly JE, Al-Samsam T, Greger J, Gebhard R: COX-2 inhibitors and postoperative pain managements in orthopedics. *Asian Oceanic Society of Regional Anesthesia* 90, 2001.
17. Hartmann B, Gebhard RE, Monaca M, Iaridis T, Thesen C, Doehn M: Measurement of cardiac output by Pulse Dye Densitometry in septic patients – Comparison with thermodilution. *Anesth Analg* 94: S169, 2002.
18. Tung NS, Bassili LM, Kocieniewska D, Greger JR, Gebhard R, Chelly JE: Continuous nerve blocks decrease morphine consumption and hospital length of stay after lower extremity amputation. *ASRA CD*, PD-21, 2002.
19. Matuszczak ME, Sciard DA, Gebhard R, Trojan S, Chelly JE: Does increased impulse time facilitate peripheral nerve blocks in diabetic patients with peripheral polyneuropathy? *ASRA CD*, PE-61, 2002.
20. Matuszczak ME, Sciard DA, Gebhard R, Kocieniewska D, Chelly JE: Peripheral nerve blocks in children and adolescents. A two years observation. *ASRA CD*, PE-62, 2002.
21. Gebhard RE, Pivalizza EG, Warters RD, Szmuk P. Acute pain after discharge from ambulatory surgery. *ASRA CD*, PE-68, 2002.
22. Gebhard RE, Matuszczak ME, Sciard DA, Tung N, Doehn M. Does age influence the success rate of regional blocks? *ASRA CD*, PD-48, 2002.
23. Gebhard RE, Pivalizza EG, Warters RD, Szmuk P. Pain after Discharge from Ambulatory Surgery – Orthopaedic Patients Benefit from Peripheral nerve Blocks. *Anesthesiology* 97: A 25, 2002.
24. Sciard DA, Matuszczak MM, Gebhard RE, Kocieniewska D. Femoral Nerve Block Combined with a Unilateral Spinal for Elderly Patients with Femoral Neck Fracture. *Anesthesiology* 97: A 44, 2002.
25. Gebhard RE, Matuszczak ME, Sciard DA, Kocieniewska D, Tung N. Lateral Sciatic Nerve Block at the Knee – Single or Double Injection Technique. *Anesthesiology* 97: A 867, 2002.

B. REFEREED ORIGINAL ARTICLES IN JOURNALS

1. Rubben H, Weissbach L, Knebel L, Deutz FJ, Giani G, Graf-Dobberstein C, Gebhard R: Adjuvant systemic chemotherapy after complete TUR of superficially invasive bladder carcinoma. *Urol.Int* 45:78-83, 1991.
2. Knüttgen D, Schaefer G, Gebhard R: Severe postoperative complications after venous and arterial air embolism during removal of an acoustic neuroma in sitting position. *Fortschritte der Anästhesiologie, Notfall- und Intensivmedizin, Supplement* 1, 1994.
3. Matuszczak M, Gebhard R, Schmitz B, Doehn M: Continuous axillary block for effective long-term postoperative analgesia. *The Internet Journal of Anesthesiology* Vol 4 N1, 2000.
4. Gebhard R, Pivalizza E, Nasri S, Chelly JE: Bilateral intraoperative atelectasis in a child with latex allergy. *Anesthesiology* 93: 1147-9, 2000.
5. Gebhard RE, Berry J, Gollas A, Chelly JE: Successful use of regional anesthesia to prevent involuntary movements in a patient undergoing awake craniotomy. *Anesth Analg* 91: 1230-1231, 2000.
6. Chelly JE, Gebhard R, Coupe K, Greger J, Khan A: Local anesthetic delivered via a femoral catheter by patient-controlled analgesia pump for pain relief after an anterior cruciate ligament outpatient procedure. *Am J Anesthesiol* 28: 192-4, 2001.
7. Chelly JE, Greger J, Gebhard R, Coupe K, Clyburn T, Criswell A: Continuous femoral block improves recovery and outcome of patients undergoing total knee replacement. *J Arthroplasty* 16: 436-45, 2001.
8. Chelly JE, Gebhard R, Greger J, Al-Samsam T: Regional Anesthesia for Outpatient Orthopedic Surgery. *Minerva Anesthesiol* 67: (Suppl 1 al N.9): 227-32, 2001.
9. Chelly JE, Greger J, Al Samsam T, Gebhard R, Masson M, Matuszczak M, Sciard D: Reduction of Operating and Recovery Room Times and Overnight Hospital Stays with Interscalene Blocks as Sole Anesthetic Technique for Rotator Cuff Surgery. *Minerva Anesthesiol* 67: 613-9, 2001.
10. Sciard D, Matuszczak M, Gebhard R, Greger J, Al-Samsam T, Chelly JE: Continuous posterior lumbar plexus block for postoperative pain management in infants. *Anesthesiology* 95: 1521-3, 2001.
11. Gebhard RE, Al-Samsam T, Greger J, Chelly JE: Distal nerve blocks at the wrist for outpatient carpal tunnel surgery offer cardiovascular stability and allow for early discharge. *Anesth Analg* 95: 351-5, 2002.

12. Chelly JE, Greger J, Gebhard R, Hagberg CA, Al-Samsam T, Khan A: A Special Article: Training of residents in peripheral nerve blocks during anesthesiology residency training. *J Clin Anesth* 14: 584-8, 2002.
13. Ezri T, Szmuk P, Warters RD, Gebhard RE, Pivalizza EG, Katz J: Changes in onset time Of rocuronium in patients pretreated with ephedrine and esmolol – the role of cardiac output. *Acta Anaesthesiol Scand*. In press. 2003

C. INVITED ARTICLES:

1. Gebhard RE: Multiple Injection Technique for Peripheral Nerve Blocks PRO – CON. American Society of Regional Anesthesia and Pain Medicine Newsletter February 2002: 3.

D. CHAPTERS IN TEXTBOOKS:

1. Gebhard RE: Single shot axillary block. In *Peripheral Nerve Blocks – A Color Atlas*. Chelly JE. 2nd Edition, Lipincott Williams & Wilkins in press, 2003.
2. Gebhard RE: Continuous axillary block. In *Peripheral Nerve Blocks – A Color Atlas*. Chelly JE. 2nd Edition, Lipincott Williams & Wilkins in press, 2003.
3. Gebhard RE: Ambulatory Anesthesia Techniques for Orthopedic Surgery. In *Ambulatory Anesthesia and Perioperative Analgesia*. Steele SM, Nielsen CK, Klein SM. 2003 in press.

E. OTHER PROFESSIONAL COMMUNICATIONS

Presentations – National & International

4/1998	Invited Speaker at the Annual German Burn Center Meeting, Hamburg, Germany “Special Anesthetic Considerations for Surgery in Burn Victims”
2/1999	Grand Rounds at The University of Texas Medical School at Houston, Houston, Texas “Intraoperative Allergic Reaction to Latex “
9/1999	Grand Rounds at The University of Texas Medical School at Houston, Houston, Texas “Benefits of Regional Anesthesia”
10/1999	Invited Speaker at the 1 st Regional Anesthesia International Symposium, Houston, Texas 1. Workshop: “Lateral Approach Sciatic Nerve at the Popliteal Fossa” 2. Live Transmission: “Posterior Approach to the Sciatic Nerve at the Popliteal Fossa”
4/2000	Grand Rounds at The University of Texas Medical School at Houston, Houston, Texas “Closed Circuit Anesthesia”
5/2000	Grand Rounds at Krankenhaus Köln Merheim, Cologne, Germany “Regional Anesthesia for Lower Extremity Surgery”
10/2000	Invited Speaker at the 2 nd Regional Anesthesia International Symposium, San Francisco, California 1. “Continuous Axillary Catheter Placement” 2. Workshop: “Axillary Catheter Placement”
11/2000	Invited Speaker Regional Anesthesia Symposium; Israel Society of Anesthesiologists, Tel Aviv, Israel “Brachial Plexus Blocks”

- 5/ 2001 Invited Speaker for Grand Round, Department of Anesthesiology, Kliniken der Stadt Koeln, Krankenhaus Merheim, **Cologne, Germany**
 “Organization of a Day Surgery Unit”
- 10/2001 Invited Speaker at the 3rd Regional Anesthesia International Symposium, **New Orleans, Louisiana**
 1. “Single Injection Technique Nerve Blocks for Ambulatory Surgery of Elbow and Hand”
 2. Workshop: “Axillary Blocks and Blocks at the Elbow”
- 12/2001 Invited Speaker for Pain Management Preceptorship for Pharmacia Pharmaceuticals, **Houston, Texas**
 “Perioperative Pain Management”
- 2/2002 Resident Lecture, Department of Anesthesiology, The University of Texas Medical School at Houston, **Houston, Texas**
 “Regional Anesthesia for Upper Extremity Surgery”
- 4/2002 Faculty, Comprehensive Regional Anesthesia Workshop Uniformed Services, University of the Health Sciences **Walter Reed Army Medical Center, Bethesda, Maryland**
 “Individual Nerve Blocks Lower Extremity Workshop”
- 4/2002 Faculty, B Braun Kaiser Meeting, **San Francisco, California**
 1. “Peripheral Nerve Blocks for Anesthesia”
 2. Workshop: “Upper Extremity Nerve Blocks”
- 5/2002 Invited Speaker Grand Round Department of Anesthesiology, Kliniken der Stadt Koeln, Krankenhaus Merheim, **Cologne, Germany**
 “The Role of the COX-2 Inhibitors in Perioperative Pain Management”
- 6/2002 Invited Speaker at the 1st Houston International Symposium of Orthopedic Anesthesia and Pain, **Houston, Texas**
 1. “Continuous Upper Extremity Blocks – Axillary”
 2. Upper Extremity Workshop: “Axillary Blocks”

8/2002	<p>Invited Speaker at the 1st Annual Pittsburgh International Symposium on Regional Anesthesia & Pain Management, Pittsburgh, Pennsylvania</p> <p>1. "Outpatient Orthopaedic Surgery – Elbow and Hand Surgery"</p> <p>2. Upper Extremity Block Workshop: "Blocks at the Elbow and Wrist"</p>
9/2002	<p>Invited Speaker at the Annual Meeting of the Texas Society of Anesthesiologists, Frisco, Texas</p> <p>Workshop: "Sciatic Nerve Blocks"</p>
10/2002	<p>Invited Speaker at the 4th Regional Anesthesia International Symposium, Orlando, Florida</p> <p>1. "Axillary Block – Discussion"</p> <p>2. Workshop: "Axillary Blocks"</p>
2/2003	<p>Invited Speaker, B.Braun Annual Sales Meeting</p> <p>Scottsdale, Arizona</p>
4/2003	<p>Faculty "Fireworks of Regional Anesthesia Anatomy"</p> <p>Louisville, Kentucky</p> <p>Lecture: "Upper Extremity Nerve Blocks"</p>
4/2003	<p>Faculty 28th Annual Spring Meeting & Workshops, American Society of Regional Anesthesia & Pain Medicine.</p> <p>San Diego, California</p> <p>Workshop: "Mastering the Lumbosacral Plexus and Lower Extremity Peripheral Blockade"</p>
5/2003	<p>Faculty, 2nd Annual Comprehensive Regional Anesthesia Workshop, Uniformed Services University of the Health Sciences</p> <p>Walter Reed Army Medical Center, Bethesda, Maryland</p> <p>Workshop: "Individual Nerve Blocks Lower Extremity"</p>

- 6/2003 Faculty Aesculap Academy
Baltimore, Maryland
 Lecture: "Pharmacology of Local Anesthetics"
 Lecture: "Single Shot and Continuous Blocks of the Upper
 Extremity"
 Lecture: "Effective Acute Perioperative Pain
 Management"
 Workshop: "Peripheral Nerve Blocks: An Interactive-
 Hands-On Workshop"
- 7/2003 Faculty, "Peripheral Nerve Blocks for Private Practice"
Houston, Texas
 Lecture: "Axillary Blocks"
 Workshop: "Axillary, Elbow, and Wrist Blocks"
- 9/2003 Invited Speaker at the Annual Meeting of the Texas
 Society of Anesthesiologists, **San Antonio, Texas**
 Workshop: "Axillary and Midhumeral Nerve Blocks"
- 10/2003 Invited Speaker at the 5th Regional Anesthesia
 International Symposium, **San Francisco, California**
 Lecture: "Total shoulder replacement"
- 4/2004 Faculty 29th Annual Spring Meeting&Workshops,
 American Society of Regional Anesthesia & Pain
 Medicine.
Orlando, Florida
 Workshop: "Mastering the Lumbosacral Plexus"

Letters to the Editor

1. Chelly JE, Greger J, Gebhard R: Ambulatory continuous perineural infusion; are we ready? *Anesthesiology* 93: 581, 2000.
2. Greger J, Al-Samsam T, Gebhard R, Tung N, Chelly JE: Discharge times for patients undergoing regional anesthesia for outpatient knee surgery. *Minerva Anesthesiol* 67: 591-2, 2001.
3. Chelly JE, Greger J, Gebhard R, Casati A: How to prevent catastrophic complications when performing interscalene blocks. *Anesthesiology* 95: 1302, 2001.
4. Gebhard RE, Fanelli G, Matuszczak M, Doehn M: Subarachnoid sufentanil for early postoperative pain management in orthopedic patients – More disadvantages than benefits? *Anesthesiology* 95: 1531-3, 2001.
5. Sciard D, Matuszczak M, Gebhard R, Kocieniewska D: Interscalene block-, sedation-, lateral positioning-, hydralazine-induced hypotension: is it really prudent? *Anesthesiology* 97: 280-1, 2002.
6. Warteres RD, Szmuk P, Pivalizza EG, Gebhard R, Ezri T: Preoperative Antibiotic Prophylaxis: The Role of the Anesthesiologist. *Anesthesiology* 99: 515-6, 2003.

Scientific Exhibits

1. American Society of Anesthesiology (Dallas, TX, 1999)
Poster: Matuszczak M, Gebhard R, Schmitz B, Doehn M: Effective postoperative analgesia with long term continuous axillary block.
2. European Society of Regional Anesthesiologists Meeting (Rome, Italy 2000)
Poster: Chelly JE, Greger J, Harvey G, Gebhard R: Perineural or intra-articular PCA for ambulatory postoperative pain management.
3. European Society of Anaesthesiologists, (Gothenberg, Sweden 2000)
Communication: Hagberg C, Al-Samsam T, Chelly J, Harvey G, Gebhard R, Greger J: Subacromial patient controlled analgesia for outpatient shoulder reconstruction.
4. American Society of Anesthesiologist Meeting (San Francisco, CA 2000)
Poster: Chelly JE, Greger J, Gebhard R, Khan A: Effects of continuous femoral infusion (CFI) on outcome in patients undergoing total knee replacement (TKR).
Poster: Chelly JE, Hagberg CA, Gebhard R, Greger J, Khan A: Teaching peripheral nerve blocks to anesthesiology residents.
Poster: Matuszczak M., Gebhard R, Wolf MJ, Jahn MC, Doehn M: Does increased supervision in the use of nerve stimulation techniques improve the success of axillary plexus block?
5. International Anesthesia Research Society Meeting (Ft. Lauderdale, FL, 2001)
Poster: Greger J, Chelly JE, Gebhard R: Peripheral nerve block training during anesthesiology residency.
Poster: Matuszczak M, Greger J, Gebhard R, Chelly JE: Lower extremity blocks for orthopedic surgery in infants and children.
Poster: Sciard D, Matuszczak M, Greger J, Gebhard R, Chelly JE: Lumbar plexus block for orthopedic procedures in infants.
6. Asian & Oceanic Society of Regional Anesthesia (Seoul, Korea, 2001)
Lecture: Chelly JE, Gebhard R, Greger J, Al-Samsam T: Continuous perineural infusion: techniques and indications.
Lecture: Chelly JE, Al-Samsam T, Greger J, Gebhard R: COX-2 inhibitors and postoperative pain managements in orthopedics.

7. American Society of Anesthesiologist Meeting (New Orleans, LA, 2001)
Poster: Gebhard RE, Al-Samsam T, Greger J, Chelly JE: Distal nerve blocks at the wrist for outpatient carpal tunnel surgery.
Poster Discussion: Gebhard RE, Greger J, Al-Samsam T, Matuszczak M, Rieger A: Single Injection high axillary block – Comparison with the multiple injection technique.
Poster Discussion: Gebhard RE, Matuszczak M, Sciard DA, Wolf M, Doehn M: Does Diabetes Mellitus influence success rate of regional blocks?
Poster: Szmuk P, Ezri T, Warters RD, Gebhard R, Pivalizza E: Changes in Onset time of Rocuronium are related to changes in cardiac output produced by Ephedrine and Esmolol.
Poster: Matuszczak ME, Sciard DA, Gebhard RE, Vorweg M, Wolf MJ: Upper extremity continuous perineural blocks in children.
8. International Anesthesia Research Society Meeting (San Diego, CA, 2002)
Poster: Hartmann B, Gebhard RE, Monaca M, Iaridis T, Thesen C, Doehn M: Measurement of cardiac output by Pulse Dye Densitometry in septic patients – Comparison with thermodilution.
9. American Society of Regional Anesthesia & Pain Medicine (Chicago, IL, 2002)
Poster Discussion: Tung NS, Bassili LM, Kocieniewska D, Greger JR, Gebhard R, Chelly JE: Continuous nerve blocks decrease morphine consumption and hospital length of stay after lower extremity amputation.
Poster: Matuszczak ME, Sciard DA, Gebhard R, Trojan S, Chelly JE: Does increased impulse time facilitate peripheral nerve blocks in diabetic patients with peripheral polyneuropathy?
Poster: Matuszczak ME, Sciard DA, Gebhard R, Kocieniewska D, Chelly JE: Peripheral nerve blocks in children and adolescents. A two years observation.
Poster Discussion: Gebhard RE, Pivalizza EG, Warters RD, Szmuk P. Acute pain after discharge from ambulatory surgery.
Poster: Gebhard RE, Matuszczak ME, Sciard DA, Tung N, Doehn M. Does age influence the success rate of regional blocks?
10. American Society of Anesthesiologists (Orlando, FL, 2002)
Poster: Gebhard RE, Pivalizza EG, Warters RD, Szmuk P. Pain after Discharge from Ambulatory Surgery – Orthopaedic Patients Benefit from Peripheral nerve Blocks.
Poster: Gebhard RE, Matuszczak ME, Sciard DA, Kocieniewska D, Tung N. Lateral Sciatic Nerve Block at the Knee – Single or Double Injection Technique.
11. American Society of Anesthesiologists (San Francisco, CA, 2003)
Poster: Gebhard RE, Pivalizza EG, Cerny JL, Melnikov V, Warters RD.
Accuracy of Certofix® Central Venous Catheter Placement Utilizing ECG-Guided Positioning with the Certodyn® Universal Adapter

Videos

Peripheral Nerve Block Techniques – Lower Extremities. B.Braun 1999

Other

1. German Television-Interview regarding the Mobile Intensive Care Unit “Intensivmobil”. 6/1994
2. Chelly JE, Greger J, Gebhard R, Harvey G, Coupe G: From clinical research to daily practice. Clinical Practice and Pain Management in Orthopedic Anesthesia. Milan, Italy, 2000. CD.
3. Gebhard R: Axillary catheter placement. Internet presentation and video www.regionalblock.com
4. Gebhard R: Lateral sciatic nerve block at the knee. Internet video. www.regionlblock.com

ORGANIZATION OF MEETINGS WITH CME CREDIT:

10/2000	Program Committee Member Second Regional Anesthesia International Symposium, San Francisco, California
10/2001	Scientific Committee Member Third Regional Anesthesia International Symposium New Orleans, Louisiana
6/2002	Program Director First Orthopedic Anesthesia International Symposium Houston, Texas
6/2002	Scientific Committee Member First Orthopedic Anesthesia International Symposium Houston, Texas
10/2002	Planning Committee Member Fourth Regional Anesthesia International Symposium, Orlando, Florida

7/2003

Program Director
Peripheral Nerve Blocks for Private Practice
Houston, Texas



Computer Controlled Local Anaesthetic Delivery System - CCLADS

CPD accredited in RSA (A008/01/87/2004) - Complies with requirements for verifiable CPD in UK

Welcome ...

to our brief introductory into CCLADS! Feel free to browse through the content (including all links) and answer a brief questionnaire to the topic ([Click here](#)). In future this site will be further developed and updated. The questionnaire is provided by the Division of Public Oral Health, University of the Witwatersrand, Johannesburg - South Africa and is part of its accredited Continued Professional Development (CPD) activity. It also complies with requirements for verifiable CPD in the UK. Upon completion and submission of the questionnaire, a Certificate will be issued.

Problem statement

A common reason for patient anxiety in dental practice are injections. An injection is characterized by three parts =

LOCAL ANAESTHETIC + DELIVERY SYSTEM + INJECTING TECHNIQUE

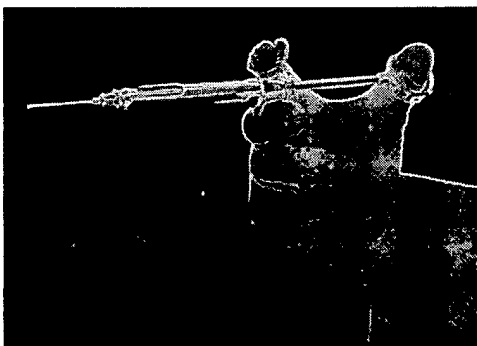
Scientific literature:

Int J Paediatr Dent.
2002 Mar; 12(2):
80-9

For further research

[Click here](#)

Syringe / Needle



Injecting technique:
Palm - Thumb - Grasp...

Manual controlled delivery system syringe / needle

- Insufficient control over Injecting pressure
- Insufficient control over Injecting rate
- No differentiation according to type of oral tissue
- Additional problem: Needle deflection

... follows Newton's 3rd Law:



Resistance = Force (Pressure)

The inability to control injecting pressure and injecting rate according to tissue type often lead to pain and discomfort. **Pain** is caused from tissue destruction during liquid deposition and insufficient anaesthetic due to drug migration from a created pressure gradient (Ballooning) into other tissue areas.

Insufficient anaesthetic may also be caused due to Needle deflection (needle bending according to bevel direction, within tissue) -

Click here [\[This will start a brief animation, please be patient\]](#)

= as higher injecting pressure and rate as greater the possibility to cause discomfort/pain.

Wand



Computer Controlled Delivery System

- Injecting rate and pressure - computer controlled
- Injecting technique based on "pen-like-grasp" enables:



- Pre - puncture technique
- Needle tip rotation (elimination of Needle deflection)

- Multi cartridge technique

- Based on the characteristics of the new delivery system, several new injecting techniques become possible or are improved:

Inferior Alveolar
(Mandibular Block)
Anterior Middle
Superior Alveolar
(AMSA) Injection
Palatal Anterior
Superior Alveolar
Injection
Modified PDL
Injection

- For more technical information about the Wand [Click here](#)

Pre - puncture technique

... allows anaesthetic solution to be deposited (diffuse) through the outer epithelium of gingiva prior to the needle penetrating the skin. It is most effectively used on the attached gingiva of the palate and attached gingiva. The bevel surface of a 30 gauge extra short needle is placed parallel to the surface with intimate contact being established. A sterile cotton applicator is positioned on top of the needle tip in an attempt to seal the bevel against the soft tissue. The computer controlled local anaesthetic delivery system is activated using a slow flow rate while pressure is continuously applied with the cotton applicator. This position is maintained for 6 to 8 seconds (6-8 beeps), allowing time for anaesthetic solution to penetrate the epithelial surface. The cotton applicator serves to stabilize the needle as well as absorb any excess anaesthetic solution. A gentle and slow advancement of the needle is then performed into tissues that are superficially

anaesthetized. Traversing the connective tissue is performed at a slow rate of advancement less the 1 mm/sec to allow the anaesthetic plum to precede the needle.

Click here [This will start a brief animation, please be patient]

Reference: * Hochman MN, Chiarello D, Hochman CB, Lopatkin R, Pergola S. Computerized Local Anaesthetic Delivery vs. Traditional Syringe Technique. NYSDJ 1997;Aug-Sept.:24-28.

Needle tip rotation

Needle Tip Rotation – a.k.a. Bi-directional rotation insertion technique^{1,2}– virtually eliminates all needle deflection as well as substantially reduces force penetration needed during the insertion of a standard bevelled needle into soft tissue. Needle deflection is known to contribute to the failure of “missed” block injections. It has been recently proven using vector force analysis that all needles “bend” or deflect as a result of forces reacting on the angled bevel of a standard needle. By using a rotational insertion technique these forces can be effectively cancelled out resulting in a straight line insertion of a standard bevelled needle. This has been shown to produce greater accuracy in placement of a needle as well as reduce the amount of force necessary to move a needle forward. Increased accuracy leads to a more accurate needle position during dental block injections. This effectively achieved with using a “pen-like grasp” that is used with the Wand thus allowing a bi-rotational insertion technique to be effectively performed.

Reference:

1 Hochman, MN, Friedman MJ. In vitro study of needle deflection: A linear insertion technique versus a bidirectional rotation insertion technique. Quintessence

Int. 2000;31:33-39

2 Hochman, MN, Friedman MJ. In vitro study of force penetration comparing a standard linear insertion to the new bi-directional rotation insertion technique. Quintessence Int. 2001;32:789-796.

Multi cartridge technique

,,, is a new technique for dentistry in which subsequent anaesthetic cartridges are replaced during a given injection without the need for needle removal as commonly found with a traditional hand-held syringe. An inadequate volume of anaesthetic at a target site is a known risk leading to incomplete anaesthesia. Traditional reloading techniques require multiple soft tissue punctures during cartridge exchange that is associated with a risk of trismus and soft tissue damage. Using the CompuDent/Wand system a needle can be left within a tissue site (i.e. Inferior Alveolar Nerve Block) while an additional anaesthetic cartridge is replaced into the Wand cartridge holder, similar to exchanging an I.V. bag on a medical patient receiving intravenous solution. This new technique represents an advantageous alternative to the traditional anaesthetic technique.

Reference: *Franco, L. Naseri, L, Hochman, MN, Camarada AJ. A New Multi Cartridge Injection Technique for Achieving Safe and Effective Dental Local Anaesthesia. In review for publication, 2003.

CPD Questionnaire

[Click here to open CPD questionnaire in your browser.](#)

- Complete all questions on screen
- Save completed questionnaire on your desktop using 'save as' option
- Attach and email questionnaire to neem@global.co.za
- Alternatively, print completed questionnaire and

fax to (+27) 011 - 717 2625

